



English Martyrs'
CATHOLIC VOLUNTARY ACADEMY



English Martyrs' Catholic Voluntary Academy Subject Policy Science

"At English Martyrs' Catholic Voluntary Academy, we offer a broad-based curriculum which promotes the spiritual, moral, cultural and physical development of our pupils and prepares them for the opportunities, responsibilities and experiences of adult life."

Our statement of Intent for Science:

Science and innovation sustains and progresses our modern society, it has the power to change the way we live our lives and is integral to our future. Therefore by increasing science capital in children, we can help them to see science as an important part of their lives and culture. English Martyrs' aims for every child to experience an individual learning journey in Science in order that they make excellent progress from whatever their starting point may be. Science is one of our three 'Driver Subjects' at English Martyrs' - meaning that it is fundamental to driving the learning within our termly topics throughout the school. These topics are guided by the National Curriculum and shaped to explore the children's interests.

Science teaching at English Martyrs' aims to give all children a strong understanding of the world around them whilst acquiring specific skills and knowledge to help them think scientifically, gain an understanding of scientific processes and also an understanding of the uses and implications of Science, today and for their future.

At English Martyrs' scientific enquiry skills are embedded in each topic the children study and these topics are revisited and developed throughout their time at school e.g. plants are taught in Key Stage 1 and again in further detail throughout Key Stage 2. By coherently planning and sequencing our science curriculum, this model allows children to build on their prior knowledge, increase their enthusiasm for topics whilst embedding this procedural knowledge into the long term memory.

All children are encouraged to develop and use a range of skills including observations, planning and investigations that are age-appropriate. They are encouraged to question the world around them and become



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independent learners in exploring possible answers for scientific based questions. Key vocabulary for topics is taught and built upon, whilst effective questioning to communicate ideas is encouraged. Concepts taught are reinforced by focusing on the key features of scientific enquiry, so the children learn to use a variety of approaches to answer relevant scientific questions.

Scientific links as a school and as a community are utilised and celebrated regularly with links to local businesses and events including: British Science Week, exploring and observing their local environments including Trent College, local world headquarters of Rolls-Royce Civil Aerospace and companies such as Toyota Manufacturing (UK), Bombardier and JCB. This includes trips and expert visitors that enhance the children's learning experience. Through all this, our children develop a sense of excitement and curiosity about natural phenomena.

In line with the National Curriculum (2014), English Martyrs' ensures that a high-quality science education that provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics but also how Science has changed our lives and is vital to the world's future prosperity.

Science in the EYFS

In the EYFS, science is included within the 'Understanding the World' area of learning. At this stage, children are introduced to science through games and activities that encourage them to explore, problem solve, make observations, predict and think critically. They explore animals, people, plants and objects in their natural environment. Children will be encouraged to ask questions about why things happen and how things work.

Early Years science also supports children in the other areas of physical and creative development. They learn about healthy eating and the effects on their body and also, different materials, colours and sounds.

In planning and guiding children's activities, we embed the key principles and approaches outlined in the EYFS Framework which are of central importance across the curriculum but have particular relevance in relation to fostering skills and dispositions associated with science learning. These are:

- A Unique Child- teaching supports children to be resilient, capable confident and self-assured
- Positive Relationships- strong partnerships that are positive and enable growing independence
- Enabling Environment-responding to individual needs and experiences to support development
- Characteristics of Effective Learning- Teaching must reflect on the different ways children learn

Our Implementation: Teaching and Learning in Science

The teaching and learning of science is integrated into our ambitious learning challenge curriculum with Science frequently being the "driver" for the overall question underpinned by each class studying a quality text linked to their topic. This reinforces our belief that opportunities for reading and writing must be planned for in all curriculum areas and enable pupils to develop strong English skills which in turn enables them to access learning in all curriculum subjects. Equally at English Martyrs' we value and understand the importance of



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Mathematics across the curriculum, therefore the children are given opportunities to apply and use Mathematics in real contexts. It is important that time is found in other subjects for pupils to develop their mathematical skills, e.g. there are regular, carefully planned opportunities for measuring in science.

However, the Science curriculum is delivered explicitly so that children know exactly which subject they are learning within each topic. In order to ensure an individual learning journey, pre-learns are used to ascertain every child's prior knowledge and skills before each topic. Teachers then adapt plans accordingly to support every child being challenged in their learning. 'Skills sheets' and 'Knowledge Mats' are produced and given to the children so that they can understand the aims of the topic and outlines knowledge and specific topic related vocabulary for all children to master. Varying teaching methods are adopted to suit a range of learning styles and resources are provided in order that all children are able to access the learning

Long-term and Medium-term plans show the curriculum coverage of Science. Progression in the objectives and skills can be seen across the year groups. The Subject leader has a thorough knowledge of the skills which are linked across the year groups and are therefore non-negotiable in order for children to make connections and build on prior knowledge. The subject leader has also identified new knowledge or "sticky knowledge" which must be purposefully taught and learnt. Short Term plans are produced by class teachers on a fortnightly basis for the teaching of Science.

Our Impact in Science

We have self-evaluated our outcomes as outstanding in Science for the following reasons: The high quality Science curriculum ensures the vast majority of pupils are working at ARE or GDS in Science, with all year groups making progress throughout the academic year. Pupils can articulate their knowledge and understanding of Science in a clear and consistent manner, appropriate for their age. This is evident consistently in their work produced.

The subject leader ensures that teachers are measuring the impact of our curriculum through the following methods

- Termly book scrutiny and learning walks that tracks knowledge and progress.
- Feedback from teachers has an impact, often with next steps extending learning rapidly
- That vulnerable groups or focus children in each year group have been correctly identified to allow for interventions to take place in order for these pupils to make rapid progress. Interventions for vulnerable groups such as SEN, EAL and Pupil Premium which is a strength of the school.
- A celebration of learning for each term demonstrates progression across the school through the use of 'products.'
- Pupil discussions about their learning
- That subject leaders are kept up to date with developments in the way science is run in our school through CPD, staff meeting, action planning and research





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Assessment

Science is assessed using teacher judgements through observation of children's involvement and their produced outcome in lessons. Teachers make an assessment of the children's progression in alignment with the outcomes of the National Curriculum for their specific Key Stage and Year Group/s and highlight the child's skills sheet accordingly. This skills sheet then becomes a working record of the child's achievements and progress to date.

Additionally teachers have Rising Stars Assessment Progression Framework that they can use regularly to consolidate learning and increase space in working memory whilst identifying any gaps in children's knowledge and understanding.

Policy written by: Tina Chibbaro - November 2019

Reviewed by:



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